

CONSULTANT NEWS BULLETIN 98-1

TABLE OF CONTENTS

Consultant Services Section News.....	1
Addendum 2 to Design Memo #42.....	1
Asbestos Certifications.....	1
Rule 5.....	1
Plan Changes.....	2
Pay Item and Bid History Updates for ‘Estimator’.....	2
High Capacity Piles.....	2
English Standard Drawings.....	3
G.P. 14.....	3
Superpave: PG Binder Shown in Plans.....	3
Records Section Plan Request Form Available on Internet.....	3
Practice Pointers.....	4
Scope / Environmental Compliance Form.....	4
Quality Assurance Form.....	5
Bridges on Extra Heavy Duty Highways.....	5
Guardrail Summary Tables.....	6
Guardrail on 3R Projects.....	6
40-8.02(01) Level One (Hierarchy of Design Criteria).....	6
85-3.03(02) Right-of-Way Changes (Initiated by the Division of Land Acquisition).....	7
49-5.02(01) Barrier Length Needed in Advance of Hazard.....	8
B Borrow and B Borrow for Structure Backfill.....	8
Placement of D-1 Joint for PCC Pavement.....	8
Reinforcing Bars.....	8
17-3.09 Monuments.....	8
Bridge Rail.....	9
Revision to “Procedural Manual for Preparing a Design Summary”.....	9
Elimination of Parcel Listing Sheet in R/W Plans.....	9
Revised Field Check Distribution Lists.....	9
Intersection Sight Distance.....	9

APPENDICIES

<i>Scope / Environmental Compliance Certification / Permit Application Certification.....</i>	<i>A1</i>
<i>Quality Assurance Form</i>	<i>B1</i>
<i>Bridges on Extra Heavy Duty Highways.....</i>	<i>C1 - C5</i>
<i>Guardrail Summary Tables</i>	<i>D1</i>
<i>B Borrow and B Borrow for Structure Backfill.....</i>	<i>E1</i>
<i>Concrete Pavement Joint Spacing</i>	<i>F1</i>
<i>Reinforcing Bars.....</i>	<i>G1 - G7</i>
<i>17-3.09 Monuments</i>	<i>H1 - H3</i>
<i>Bridge Rail, excerpt from draft Chapter 61 of the Design Manual</i>	<i>I1 - I5</i>
<i>Procedural Manual for Preparing A Design Summary.....</i>	<i>J1 - J2</i>
<i>Bridge Replacement Special Provision Checklist.....</i>	<i>K1 - K2</i>
<i>Erosion & Sediment Control Plan Checklist.....</i>	<i>L1</i>
<i>Application Form and Instructions for Section 401 Water Quality Certification.....</i>	<i>M1 -M12</i>

Consultant Services Section News

Last Fall we welcomed Joan Staggs and Cindy Gorman to our Project Coordination Staff. The project coordination assignments for “State Projects” are as follows:

	Phone No's.	Route No's.
Cindy Gorman	232-5339	1 – 31
Mary Briggs	232-5341	32 – 65
Joan Staggs	232-5199	66 – 912
Laura Monk	232-0679	All Bridge Rehabilitation, Signing and Lighting Projects

Addendum 2 to Design Memo #42

Addendum 2 to Design Memo #42 has been prepared to provide additional information regarding the preparation of pipe related aspects of contracts for letting. The addendum is available at www.state.in.us/dot/TS/standard/pipe/pipe.htm. No mass distribution of addendum hard copies will be made. If you do not have Internet access or have any questions regarding the addendum, please call Jeff James, Division of Technical Services, at (317)232-5342.

Asbestos Certifications

The INDOT Consultant Services News Bulletin, No. 96-1, requires the designer to file a statement to certify that no asbestos-containing material was specified as a building material for the project. Currently, the certifications that are received are placed in the project file. In order to be of use to INDOT, INDOT must be able to retrieve the appropriate statement when the structure is worked on in the future. Therefore, effective for tracings submitted after March 1, 1998, the Designer shall send the original certification to the appropriate District Bridge Inspector, with a copy to the Environmental Services Manager (Janice Osadczuk), and place a copy in the design calculation book for the project.

Since January 1997 the contractor has been required by the supplemental specifications to provide a similar statement regarding asbestos used as a building material.

Rule 5

In a recent meeting with the Department of Natural Resources and a Soil & Water Conservation District it was requested that a written project description and letting date be included on the title sheet of plans submitted for Rule 5. A lot of problems seem to be occurring on rehabilitation type projects with minor erosion control issues because the SWCD's cannot interpret the scope of work. Please include a written project description and letting date on the title sheet of all Rule 5 plan submittals.

Plan Changes

Any changes made to the tracings after a project is turned in to the Records Supervisor (Janie Marks) but before bids are opened, must be handled as follows:

1. Changes are made to the tracings with a revision note placed in the revision block on the title sheet (bridge projects) or index sheet (road projects). This revision note must contain the date of the revision, the revised sheet numbers and a short explanation of the changes. A note should also be placed on the revised sheet or sheets in a location that will not restrict its visibility. Erasures are still allowed at this stage.
2. Revise the special provisions (noting all changes), if needed.
3. Revise quantities and construction cost estimate if needed.
4. Submit the revised tracings, special provisions package, quantity computations, construction cost estimate using Estimator, and diskette containing the unique special provisions and construction cost estimate.
5. No changes are allowed one week prior to opening bids.

NOTE: The procedure regarding construction changes (see Consultant Services News Bulletin 97-1, page 34) is still valid.

Pay Item and Bid History Updates for 'Estimator'

The Technical Services Division now has the pay item updates available on the Internet for 'Estimator' (formerly known as HighEst). The updates are available at www.ai.org/dot/TS/contract/ under General Information.

For security reasons the bid history updates will not be available on the Internet until further controls can be utilized. The updates are available via E-mail, however, through Ron Scott of the Technical Services Division. Please request updates by submitting an E-mail or fax message to Ron at: rscott@indot.state.in.us or (317)232-0676 or 233-5314.

High Capacity Piles

If you desire to have a working stress capacity of more than 70 tons per pile you must let the Materials and Tests Division representative and the geotechnical consultant (if applicable) know at the preliminary field check. This should also be documented in the field check minutes.

English Standard Drawings

Some English standard drawings have been developed for which there have been only metric standard details for until recently. These do not include the English traffic detail sheets for which traffic designers are calling for metric standard drawings and recurring special provision 805-T-105, which shows conversion factors from metric to English. These details have been placed on metric drawing frames. Each English drawing designation is the same as that of the corresponding metric drawing, with an E in front of the drawing designation. These drawings are being distributed as recurring plan details with “Recurring Special Provisions” distributions.

G.P. 14

The G.P. 14 that the Louisville Corps of Engineers used expired on February 3, 1998. We have been advised that it will not be reissued. Therefore, INDOT, as well as all designers of LPA projects, will need to make application to the Corps for them to verify that these projects meet the criteria for one of the nationwide permits. The projects affected include projects meeting the G.P. 14 criteria that will be: 1.) let after February 3, 1998 or 2.) still under construction after February 3, 1998.

In addition, it will be necessary on these projects to also submit for 401 Water Quality Certification.

Superpave: PG Binder Shown in Plans

For all contracts let after October 8, 1997, the performance graded binder for Superpave, QC/QA HMA mixes (401 pay items), is to be shown on all typical cross section sheets. The PG binder shall be noted as follows to prevent confusion:

QC/QA PG Binder XX-YY, Mainline
QC/QA PG Binder XX-YY, Shoulder

The PG binder for Non-QC/Non-QA HMA mixes (402 pay items) is stated in the specifications and will not be addressed on the typical cross section sheets.

Questions on this subject should be directed to Joe Gunderson of the Materials & Tests Division at (317)232-5280.

Records Section Plan Request Form Available on Internet

Records Section plan requests may now be made using an Internet E-mail form. The form may be found at <http://www.ai.org/dot/info.htm>.

Practice Pointers

1. The description on the Title Sheet should be simple and follow the description on the schedule. For example, “Bridge replacement on State Road 67 over Fall Creek, located 12.86 kilometers southwest of south junction with State Road 39, in Section 13, T-11-N, R-2-W, Ray Township, Morgan County, Indiana”. Do not use a legal description.
2. Follow Design Memo #26. Especially, remember to include one of the following (Suburban, Intermediate, or Built-Up) when it is an Urban project.
3. With respect to resolution of hearing comments it is not responsive to say it is not part of the scope or it will be looked into. An explanation must be given.
4. An advisory speed limit sign is meaningless when determining the posted speed (regulatory speed limit) and design speed for 3R projects.
5. Metric standard drawings do not go on the title sheet; the list is included in the proposal book.
6. If there is asphalt on the project, show ESALs on the Title Sheet.
7. The designer (including consultants) is responsible for submitting the “Memo to Contract Services” along with the Tracings.
8. If a project is exempt from FHWA oversight don’t invite FHWA to the field checks.
9. Check intersection sight distance.
10. The minimum length of crest and sag vertical curves is 0.6V for metric projects and 3V for English projects.
11. Structures greater than 20 feet are considered bridges and must have a Bridge File No., separate Des No., separate “Estimator” cost estimate, and may warrant a separate Project No. Other distinctly separate work categories, such as a geographically separate wetland mitigation site linked to a major project, will also require a separate Des No., separate “Estimator” cost estimate, and separate Project No.

Scope / Environmental Compliance Form

The Scope / Environmental Compliance Form included in Appendix “A” supercedes the previous version and shall be used on all submittals after April 1, 1998.

Quality Assurance Form

Included in Appendix “B” is a revised Quality Assurance Form that supercedes the one distributed in August 1990. This new form provides a signature line for the designer as well as for the reviewer. This is intended to document your use of independent qualified reviewers. The new form will be required for all submittals after April 1, 1998.

The Quality Assurance Procedures’ checklists are currently being modified and updated for inclusion in Chapter 14 of the Design Manual as plan submittal checklists. The checklists distributed in the July 16, 1990, Quality Assurance Procedures should be used until Chapter 14 is distributed.

Bridges on Extra Heavy Duty Highways

The following section from Indiana Code lists the segments of road which are extra heavy duty highways. A listing of the affected bridges and diagrams of the “Michigan Train” loadings that these bridges must support is included in Appendix “C”.

IC 9-20-5-4

Sec. 4. In addition to the highways established and designated as heavy duty highways under section 1 of this chapter, the following highways are designated as extra heavy duty highways:

- (1) Highway 41, from 129th Street in Hammond to Highway 312.*
- (2) Highway 312, from Highway 41 to Highway 12.*
- (3) Highway 912, from Michigan Avenue in East Chicago to Highway 12.*
- (4) Highway 12, from Highway 912 to Clark Road in Gary.*
- (5) Highway 20, from Clark Road in Gary to Highway 39.*
- (6) Highway 12, from one-fourth (1/4) mile west of the Midwest Steel entrance to Highway 249.*
- (7) Highway 249, from Highway 12 to Highway 20.*
- (8) Highway 12, from one and one-half (1 1/2) miles east of the Bethlehem Steel entrance to Highway 149.*
- (9) Highway 149, from Highway 12 to a point thirty-six one-hundredths (.36) of a mile south of Highway 20.*
- (10) Highway 39, from Highway 20 to the Michigan state line.*
- (11) Highway 20, from Highway 39 to Highway 2.*
- (12) Highway 2, from Highway 20 to Highway 31.*
- (13) Highway 31, from the Michigan state line to Highway 23.*
- (14) Highway 23, from Highway 31 to Olive Street in South Bend.*

As added by P.L.2-1991, SEC.8. Amended by P.L.12-1991, SEC.4; P.L.123-1993, SEC.1; P.L.124-1993, SEC.1; P.L.119-1995, SEC.2.

Guardrail Summary Tables

Effective immediately, a guardrail summary table shall be provided on all projects that have guardrail pay items. The two example tables provided in Appendix “D” show the suggested format. The first table is for use on projects with small amounts of guardrail such as bridge replacement projects or other spot improvements. The second table is for use on major road projects with numerous runs of guardrail.

Guardrail on 3R Projects

Item 6 of 55-5.04(01) states that “[t]he length of need (of guardrail) may be modified if deemed appropriate by field review team members.” The manual does not provide any guidance to the field review team members. Where restrictive conditions warrant, the following table may be used to determine the Runout Length (LR):

Design Speed Kph (mph)	AADT			
	< 1,000	1000 to 4,999	5,000 to 9,999	≥ 10,000
110 (70)	67 (220)	79 (260)	91 (300)	110 (360)
100 (60)	52 (170)	55 (180)	64 (210)	79 (260)
90 (55)	46 (150)	50 (165)	58 (190)	72 (235)
80 (50)	40 (130)	46 (150)	52 (170)	64 (210)
70 (45)	35 (115)	40 (130)	46 (150)	56 (185)
60 (40)	30 (100)	34 (110)	40 (130)	49 (160)
50 (30)	21 (70)	24 (80)	27 (90)	34 (110)

One example of a restrictive condition is the close proximity of a driveway (which cannot be moved any farther from the bridge due to the property line) to the end of a bridge.

If it is decided at the field check to shorten the length of guardrail needed, the field check minutes must document the decision.

40-8.02(01) Level One (Hierarchy of Design Criteria)

Revision to the Design Manual. Item No. 3 should be revised as follows:

3. *shoulder widths for uncurbed sections and curb offset for curbed sections:*

85-3.03(02) Right-of-Way Changes (Initiated by the Division of Land Acquisition)

The following is a revision to the Design Manual:

Any changes to the right-of-way, initiated by the Division of Land Acquisition after the final right-of-way design plans have been processed, will require:

1. *Land Acquisition will verbally request the Designer to review a proposed change.*
2. *The Designer will verbally advise Land Acquisition of its position regarding the request.*
3. *Once the request has been reviewed and approved, Land Acquisition will send a memorandum to the Designer authorizing a change to plans, with a copy to the Design Project Coordinator. Land Acquisition will establish a reasonable due date for the submission and communicate it to the Designer in the memorandum.*
4. *The designer revises the plans in accordance with Land Acquisition's memorandum.*

If the Designer is a consultant go to 5.

If the Designer is in-house, go to 7.

5. *The Designer submits revised plan sheet(s), along with a copy of the Division of Land Acquisition request, to the Design Project Coordinator. The Design Project Coordinator forwards the submission to the reviewer.*
6. *Reviewer checks the submission in accordance with "limited review" policy.*

If acceptable, the reviewer transmits the revised plan sheet(s) along with a copy of the Land Acquisition Division's request to the Design Project Coordinator. Go to 7.

If not acceptable, the Designer sends a letter through the Design Project Coordinator to the consultant. The consultant shall resolve the matter and resubmit.

7. *One copy of the revised plan sheet(s), along with a copy of the Division of Land Acquisition request, is distributed by the Design Project Coordinator as follows:*
 - a. *the author of the Division of Land Acquisition memo who requested the change,*
 - b. *the Manager of the Right-of-Way Engineering Section, and*
 - c. *the Design Project Manager for consultant projects (or the designer for in-house projects).*

Note: A copy of correspondence only is sent to the Manager of the Buying Section.

49-5.02(01) Barrier Length Needed in Advance of Hazard

The following paragraph is a revision to the Design Manual:

Figure 49-5E illustrates the variables in the layout of an approach barrier to shield an area of concern for adjacent traffic. Generally, roadside barriers should be constructed parallel to the roadway; however, flared guardrail may be used in special circumstances. Figure 49-5F presents the runout length (L_r) and shy line offset (L_s) as a function of design year ADT and design speed. Figure 49-5G provides the flare rate ($a:b$), relative to the shy line. The shy line offset is defined as the distance beyond which a roadside obstacle will not be perceived as a threat by a driver. The roadside barrier should be placed beyond the shy line offset, except as described in 55-5.04(02) for 3R projects. The following procedures are used to determine the barrier length of need:

B Borrow and B Borrow for Structure Backfill

Recurring Special Provision 211-R-357, included in Appendix "E", shall be specified for all projects having B Borrow or B Borrow for Structure Backfill.

Placement of D-1 Joint for PCC Pavement

Short sections of pavement replaced with PCC pavement, i.e. bridge underpasses and bridge approaches, have shown premature random transverse cracks. The pavement engineer has recommended the spacing of D-1 contraction joints be reduced to 4.5m (15 ft) for new PCC pavement of less than 300m (984 ft) length. Also the depth of saw cut for transverse joints for the above pavement shall be increased to $D/3 \pm 12\text{mm}$. Underdrains shall be provided for this pavement section.

The designer shall include special provision 501-R-352, included in Appendix "F", in affected projects beginning with the April 1998 letting. Also revise pay quantities for D-1 contraction joint.

Reinforcing Bars

Recurring Special Provision 703-R-358, included in Appendix "G", shall be specified for all projects utilizing reinforcing bars beginning with the May 1998 letting.

17-3.09 Monuments

A draft of Chapter 17, Section 3.09, of the Design Manual is included in Appendix "H". The provisions of this draft chapter should be implemented for all plans scheduled to be ready-for-letting in or after July 1998.

Bridge Rail

An excerpt from draft Chapter 61 of the Design Manual is included in Appendix “I” to provide interim guidance in bridge rail use until the chapter is published.

Revision to “Procedural Manual for Preparing a Design Summary”

Please replace the title sheet and page No. 3 of the “Procedural Manual for Preparing a Design Summary” with the revised sheets included in Appendix “J”. The revision adds an item No. 4. to Section 2.a. “Roadway – the following minimal data should be included:”. The additional item is as follows:

4. note whether the intersection sight distance meets the applicable criteria for the project.

Please also see the “Intersection Sight Distance” article in this news bulletin.

Elimination of Parcel Listing Sheet in R/W Plans

The “Parcel Listing for Land Acquisition” will no longer be included in Right-of-Way Plans. This sheet was provided by the Land Acquisition Division. Designers should no longer include a sheet number or any other reference to this sheet in the Right-of-Way Plans.

Revised Field Check Distribution Lists

The field check distribution lists have been revised and will be available very soon on the Internet from the “Design Division” button at <http://www.ai.org/dot/info.htm>.

Intersection Sight Distance

Chapter 46-10 presents the criteria for intersection sight distance on 4R projects. Chapter 55-4.06(04) presents the criteria for intersection sight distance for 3R projects. When the opportunity arises within a 3R project to reconstruct the mainline vertical alignment the 4R intersection sight distance should be viewed as desirable and the 3R as minimum.

The designer shall determine the required intersection sight distance for each public road approach within the project limits. Please note that the method to calculate the required intersection sight distance is dependent upon the type of intersection (signalized, stop control, or yield control). In addition, the designer shall calculate the intersection sight distance provided for each public road approach within the project limits.

It is noted that the required intersection sight distance listed in the geometric design tables in chapters 53 (Tables 53-1 through 53-9) and 55 (Tables 55-3A through 55-3H) are misleading because the required intersection sight distance is dependent upon the crossroad grade and must be calculated for each site.

The “crossroad grade” (figures 46-10E and 46-10F) is the grade of the public road from which the entering vehicle is coming. See figure 46-10D.

Figure 46-10E (Acceleration Rates (From a Stop)) should read as follows:

Crossroad Grade (Percent)				
-4 or less	-2	0	+2	+4 or more
0.7	0.9	1.0	1.1	1.3

The designer should check intersection sight distance at the grade review (road projects) or structure size and type (bridge projects) stage because it can affect the grades.

Consultants shall submit their computations for intersection sight distance at the Grade Review or Structure Size and Type stage or at the next plan submission after receipt of this document. The INDOT reviewer shall review the computations to be sure that the intersection sight distance criteria has been met.

Effective immediately, for each project that contains one or more public road approaches the designer shall include a brief discussion about intersection sight distance in the Design Summary. If the intersection sight distance is not met the designer must document and disclose the rationale for not meeting the Level Two criteria. If there are no public road approaches within the project limits, the designer shall include a statement (such as “There are no public road approaches within the project limits”) in the Design Summary. See article titled Revision to “Procedural Manual for Preparing a Design Summary”, in this news bulletin.

SCOPE / ENVIRONMENTAL COMPLIANCE CERTIFICATION / PERMIT APPLICATION CERTIFICATION

Project Des # _____

Project Type _____

Structure # _____

Project Location _____

Check One:

- ☐ Scope Reviewed At First Plan Submittal (1)
☐ Environmental At Hearing Submittal (1) (2) (4)
☐ Environmental At Design Approval (1) (2) (3) (4)
☐ At Final Plans, All Permits Required Have Been
Determined And Applications Have Been Made. (1) (2) (3) (4)

Check As Appropriate:

- ☐ 1. I have reviewed the Scope of Work / Environmental Document. The design is consistent with the Scope of Work and statements made in the Environmental Document.
- ☐ 2. All mitigation measures stated in the Environmental Document and/or Permits are incorporated into the plans and specifications.
- ☐ 3. The Design Summary is accurate and consistent with the Environmental Document and Plans.
- ☐ 4. The following Permit(s) are required for the project and applications have been made.

<u>Permit</u>	<u>Required</u>	<u>Applied For</u>
U.S. Army Corps of Engineers Section 404 Permit Circle Permit Type: Nationwide () Individual	Y or N	Y or N
I.D.N.R. Construction in a Floodway Permit	Y or N	Y or N
I.D.N.R. Lake Preservation Act Permit	Y or N	Y or N
National Pollutant Discharge Elimination System (NPDES) Permit	Y or N	Y or N
I.D.E.M. Section 401 Water Quality Certification	Y or N	Y or N
U.S. Coast Guard Bridge Permit (Section 9)	Y or N	Y or N
U.S. Coast Guard Construction, Dumping and Dredging Permit	Y or N	Y or N
FAA Permit	Y or N	Y or N
U.S. Army Corps of Engineers Levee Permit	Y or N	Y or N
Rule 5 Submissions (Circle "Y" in <u>Applied For</u> Column only when N.O.I. has been sent.)	Y or N	Y or N

Name (Print) _____

Initials _____
INDOT Reviewer

Consultant _____

Date _____

Signature _____

Date _____

A1

Revised 1-23-98

(js-

QUALITY ASSURANCE FORM

Consultant is responsible for filling out both sections.

Consultant:_____

Project Description:_____

Project #:_____ Design #:_____

Submittal:_____

This submittal has been reviewed in regards to consistency, completeness and overall content prior to submittal by:

Project Manager:_____

Telephone Number:_____ Date:_____

CONSULTANT'S REVIEWERS COMPLETE THIS SECTION (See Note)

The above submittal has been reviewed for quality in accordance with the Quality Assurance Procedures.

Items(s):_____ Designer:_____ Reviewer:_____

Items(s):_____ Designer:_____ Reviewer:_____

Items(s):_____ Designer:_____ Reviewer:_____

Items(s):_____ Designer:_____ Reviewer:_____

Items(s):_____ Designer:_____ Reviewer:_____

Items(s):_____ Designer:_____ Reviewer:_____

Remarks:_____

NOTE: The consultant is responsible for checking all of their work as outlined in the July 16, 1990, Quality Assurance Procedure Manual.

Bridges on Extra Heavy Duty Highways

A list of the specific bridges on extra heavy duty highways and copies of the truck loading diagrams, as distributed in this bulletin, are available from Jeff Clanton, Consultant Services Manager, jeff_clanton@indot.ibmmail.com..

Guardrail Summary Tables

Example guardrail summary tables, as distributed in this bulletin, are available from Jeff Clanton, Consultant Services Manager, at jeff_clanton@indot.ibmmail.com.

B Borrow and B Borrow for Structure Backfill

On contracts which require B borrow or B borrow for structure backfill, the Contractor shall have the option of either providing this material from a CAPP source or supplying the material from a pit meeting the requirements of 211 and with contractor gradation control. Thus, the Contractor has three options for supplying B borrow or B borrow for structure backfill from a pit.

- (1) Establish a CAPP producer yard at the pit site;
- (2) Contractor has gradations performed at a recognized testing laboratory; or
- (3) Contractor has gradations performed by a CAPP certified aggregate technician.

The frequency of gradation control for the Contractor shall be in accordance with the Department's Manual for Frequency of Sampling and Testing. The sampling and testing of the B borrow material shall be in accordance with applicable sections of 904 for fine and coarse materials. The costs of the contractor gradation control, including equipment, sampling, testing, etc. shall be included in the cost of the B borrow.

The Department testing may consist of random verification samples taken at the contract site.

NOTE: The basis for use for this recurring will be: PAY ITEMS FOR B BORROW OR B BORROW FOR STRUCTURE BACKFILL OR ALL PROJECTS HAVING B BORROW OR B BORROW FOR STRUCTURE BACKFILL.

CONCRETE PAVEMENT JOINT SPACING

The Standard Specifications are revised as follows:

SECTION 501, BEGIN LINE 674, DELETE AND INSERT AS FOLLOWS:

(d) Sawed Contraction Joints. Unless otherwise approved, contraction joints shall be created by sawing grooves in the surface of the pavement. The joints shall be of the dimensions shown on the plans. The sawed contraction joint spacing shall be as shown on the plans or as directed, but shall not exceed ~~6 m (20 ft)~~ 5.5 m (18 ft) for new concrete pavement sections greater than 300 m (990 ft), nor shall the joint spacing exceed 4.5 m (15 ft) for new concrete pavement sections 300 m (990 ft) or less.

Sawed contraction joints shall be cut in two operations. An initial saw cut shall be made as shown on the plans and as described herein *except the depth of the initial transverse saw cut shall be D/3 for new concrete pavement sections 300 m (990 ft) or less.* The initial saw cut shall

Basis for Use: PAY ITEM FOR CONCRETE PAVEMENT

501-R-352

REINFORCING BARS

The Standard Specifications are revised as follows:

SECTION 703, DELETE LINES 1 THROUGH 156

SECTION 703, AFTER LINE 157, INSERT AS FOLLOWS:

SECTION 703 - REINFORCING BARS

703.01 Description. *This work shall consist of furnishing and placing reinforcing bars and threaded tie bar assemblies with reinforcing bars in accordance with 105.03.*

703.02 Materials. *Materials shall be in accordance with the following:*

<i>Reinforcing Bars, Plain or Epoxy Coated.....</i>	<i>910.01</i>
<i>Reinforcing Bar Splicing System.....</i>	<i>910.01(b)3</i>
<i>Support Devices</i>	<i>910.01(b)9</i>
<i>Threaded Tie Bar Assembly.....</i>	<i>910.01(b)2</i>

703.03 Bar List. *The quantity and size of the reinforcing bars shall be verified against the structure drawings and the necessary corrections, if any, shall be made before ordering. Errors in the bar list and bending schedule will not be cause for adjustment of the contract unit price.*

703.04 Protection of Materials. *Reinforcing bars shall be protected at all times from damage. When placed in the work, the reinforcing bars shall be free from dirt, harmful rust, detrimental scale, paint, oil, or other foreign substance. The various sizes and lengths shall be marked plainly to facilitate inspection and checking.*

Epoxy coated reinforcing bars shall be handled and stored in a manner to prevent damage to the reinforcing bars and the coating. All systems for handling coated reinforcing bars shall have padded contact areas. All bundling bands shall be padded or banding shall be used which prevents damage to the coating. All bundles of coated bars shall be lifted with a spreader bar, multiple supports or a platform bridge to prevent bar to bar abrasion from sags in the bundles of coated reinforcing bars. The reinforcing bars shall not be dropped or dragged. The bundled bars shall be stored above the ground on wooden or padded supports.

Repairs to the epoxy coating on epoxy coated reinforcing bars shall be performed on all damaged areas larger than 5 mm by 5 mm (1/4 in. by 1/4 in.). A bar will be rejected if the total area of damage exceeds 2 percent of the surface area or if the total area of repair exceeds 5 percent of the surface area. All damage within each area shall be cleaned and the repair shall be performed before visible oxidation appears. The patching or repair material shall be in accordance with 910.01(b)9.

CONSTRUCTION REQUIREMENTS

703.05 Bending. Reinforcing bars required to be bent shall be accurately cold bent in a bending machine to the shapes shown on the plans. All bars in which cracks or splits occur at bends will be rejected.

703.06 Placing and Fastening. All dimensions shown on the plans for spacing of reinforcing bars apply to centers of bars unless otherwise noted. All bars shall be accurately placed and, during placing of the concrete, held firmly in the position as shown on the plans. Distances from the forms shall be maintained by means of chairs, ties, hangers, or other approved support devices. All reinforcing bars shall be wired rigidly or fastened securely at sufficient intervals to hold the bars in place. Welding of reinforcing bars at intersections will not be permitted. Chairs and supports holding upper layers of reinforcing bars shall support the transverse bars. The upper layer of reinforcing bars in bridge floors shall be tied or fastened at such intervals as necessary to prevent an upward or a lateral movement of a bar from the planned position.

Layers of reinforcing bars shall be separated by spacers. Reinforcing bars shall be separated from horizontal surfaces by being suspended or supported on approved chairs and spacers capable of supporting the designed loads. Supports and spacers shall be of such shape as to be easily encased in concrete. That portion which is in contact with the forms shall be noncorrosive and non-staining material. They shall be of an approved type. Vertical stirrups shall always pass around main tension members and shall be securely attached thereto. The use of pebbles, pieces of broken stone or bricks, metal pipe, wooden blocks, and similar devices for holding bars in position will not be permitted.

After being placed, reinforcing bars will be inspected and approved before the concrete is deposited. The positions of the reinforcing bars shall not be disturbed both during and after depositing the concrete. Any concrete placed in violation of this requirement may be rejected and its removal will be required. Where reinforcing bars project from construction joints, all mortar clinging to the reinforcing bars from previous pours shall be removed before the next enveloping pour is made.

All reinforcing bars shall be furnished in the full lengths indicated on the plans unless splices are indicated. No other splicing will be allowed except with written permission. Unless otherwise shown on the plans, reinforcing bars shall be lapped 32 diameters to make a splice. Construction joints shall not be made within the limits of lapped bars. For lapped splices, reinforcing bars shall be placed in contact and rigidly clamped or wired in an approved manner. Insofar as possible, splices shall be staggered and well distributed or located at points of low tensile stress. Splices will not be permitted at points where the section does not provide a distance of at least 50 mm (2 in.) between the splice and the nearest adjacent bar or surface of the concrete.

When splicing is indicated or allowed, an appropriate splice system on the list of approved Reinforcing Steel Splicing Systems may be used in lieu of lapped bars. The splicing system shall be installed in accordance with the manufacturer's recommendations.

Welded wire fabric, when required, shall be placed as shown on the plans or as otherwise directed. The sheets shall overlap sufficiently to maintain uniform strength and shall be securely fastened at lapped ends and edges. The laps shall be no less than one mesh in width.

Spiral reinforcement, consisting of evenly spaced continuous spirals, shall be held firmly in place by attachment to vertical reinforcement. The spirals shall be held true to line by vertical spacers. Anchorage for spiral reinforcement shall be provided by 1 1/2 extra turns of the spiral rod or wire at each end of the spiral unit. Splices in spiral rods or wire shall be made by a lap of 1 1/2 turns.

Threaded tie bar assemblies may be used in lieu of spliced reinforcing bars shown on the plans. Threaded tie bar assemblies shall achieve the minimum load in accordance with 910.01(b)2.

703.07 Method of Measurement. *Reinforcing bars will be measured by the kilogram (pound) based on the theoretical number of kilograms (pounds) complete in place as shown on the plans or placed as ordered. The quantities of materials furnished and placed shall be based upon the calculated masses (weights) of the reinforcing bars actually placed in accordance with these specifications. The masses (weights) calculated shall be based upon the following tables.*

Metric Table

<i>Bar Designation No.</i>	<i>Mass per meter, kilograms</i>	<i>Bar Designation No.</i>	<i>Mass per meter, kilograms</i>
10	0.560	29	5.060
13	0.994	32	6.404
16	1.552	36	7.907
19	2.235	43	11.38
22	3.042	57	20.24
25	3.973		

English Table

<i>Bar Designation No.</i>	<i>Weight per linear foot, pounds</i>	<i>Bar Designation No.</i>	<i>Weight per linear foot, pounds</i>
1/4 in.	0.167	8	2.670
3	0.376	9	3.400
4	0.668	10	4.303
5	1.043	11	5.313
6	1.502	14	7.65
7	2.044	18	13.60

Threaded tie bar assemblies will be measured by the number of assemblies placed.

Welded wire fabric will not be measured.

703.08 Basis of Payment. *The accepted quantities of reinforcing bars will be paid for at the contract price per kilogram (pound), complete in place.*

If the substitution of reinforcing bars larger than those specified is permitted, payment will be made for only that mass (weight) which would be required if the specified bars had been used.

If the use of reinforcing bar lengths shorter than those shown on the plans is permitted for convenience in transporting or placing the bars, payment will be based on the mass (weight) of the lengths shown on the plans.

Payment of threaded tie bar assemblies will be at the contract unit price per each, complete in place. If epoxy coating is specified, payment of the assemblies will be at the contract unit price per each for threaded tie bar assembly, epoxy coated.

Payment will be made under:

Pay Item	Metric Pay Unit Symbol (English Pay Unit Symbol)
Reinforcing Bars.....	kg (LBS)
Reinforcing Bars, Epoxy Coated	kg (LBS)
Threaded Tie Bar Assembly.....	EACH
Threaded Tie Bar Assembly, Epoxy Coated	EACH

The costs of metal chairs, spacers, clips, wire, or other mechanical means used for fastening or holding reinforcement in place, and laps shall be included in the cost of reinforcing bars. The costs of coating materials and repair of damaged coating materials on reinforcing bars and on metal chairs, spacers, clips, or other mechanical means used for fastening or holding reinforcement in place, and laps shall be included in the cost of epoxy coated reinforcing bars. If threaded tie bar assemblies are used in lieu of spliced reinforcing bars as shown on the plans, the cost of such assemblies shall be included in the cost of reinforcing bars.

If welded wire fabric is required, the cost of furnishing and placing it shall be included in the cost of the concrete in which it is placed.

SECTION 910, DELETE LINES 3 THROUGH 50.

SECTION 910, AFTER LINE 51, INSERT AS FOLLOWS:

910.01 Reinforcing Bars and Dowel Bars

(a) General. *Unless otherwise specified, bars for concrete reinforcement shall be deformed billet steel, grade 420 (60). The bars for cement concrete pavement shall be deformed billet steel, except tie bars that shall be bent and subsequently straightened during construction shall be deformed bars in accordance with ASTM A615/A615M, grade 300 (40). Tie bar assemblies used in lieu of bent tie bars shall meet the minimum total ultimate strength and minimum total yield strength requirements specified for bent tie bars; bend test and elongation will not be required.*

Reinforcing steel used in precast or precast prestressed concrete structural members, including deck panels, shall be in accordance with ASTM A615/A615M, grade 420 (60).

Reinforcing bars will be jobsite sampled in accordance with the Frequency Manual and, when shipped to the project site, the bars shall be accompanied by the types of certifications specified in the Frequency Manual and in accordance with 916. As an alternate procedure, the reinforcing bars may be furnished by selecting bars made by a manufacturer on the list of Certified Uncoated Reinforcing Bar Manufacturers and in accordance with ITM 301. When shipped to Department contracts, the reinforcing bars shall be accompanied by the types of certifications specified in ITM 301 and in accordance with 916.

(b) Specific Requirements.

1. Billet Steel Bars. *Billet steel bars shall be in accordance with ASTM A615/A615M.*

2. Threaded Tie Bar Assembly. *The threaded tie bar assembly shall be deformed billet steel, grade 420 (60), in accordance with 910.01(b)1 and a coupling device. The tie assembly shall achieve a minimum load of 525 MPa (76.144 kip/in²). An epoxy coating with a minimum film thickness of 150 μ m (6 mils) shall be applied to the coupling device.*

3. Splicing Systems. *Reinforcing steel splicing systems shall be selected from the list of approved Reinforcing Steel Splicing Systems. A manufacturer may request to have a splicing system added to the list by submitting three randomly elected epoxy coated bars of each bar designation to be included as an approved splicing system on the list. The samples furnished shall be assembled. The splicing system will be tested for tensile strength in accordance with ASTM A 370 and shall reach 150 percent of the specified yield on all three samples for each bar size submitted. Splicing systems demonstrating consistent, repeatable, and passing test results will be added to the list. Approved bar designations will be noted on the list.*

4. Blank.

SECTION 910, BEGIN LINE 62, DELETE AND INSERT AS FOLLOWS:

- c. Weld shear tests of fabric will be performed on the test specimens obtained for testing tensile properties in accordance with the ~~established frequency schedule~~ *Frequency Manual*. In case of weld shear failure, additional test specimens shall be obtained in accordance with ASTM A 185

SECTION 910, BEGIN LINE 78, DELETE AND INSERT AS FOLLOWS:

- c. Weld shear tests of fabric will be performed on the test specimens obtained for testing tensile properties in accordance with the ~~established frequency schedule~~ *Frequency Manual*. In case of weld shear failure, additional test specimens shall be obtained in accordance with ASTM A 497

SECTION 910, DELETE LINES 89 THROUGH 179.

SECTION 910, AFTER LINE 180, INSERT AS FOLLOWS:

Low relaxation strand with a nominal diameter of 12.70 mm (1/2 in.) and a cross sectional area of 108 mm² (0.167 in²) shall have a breaking strength of 20 400 kg (45,000 lb.).

Uncoated 7 wire strand shall be covered by the type of certification specified in the Frequency Manual and in accordance with 916.

8. Steel Spiral Reinforcement. *Steel spiral reinforcement shall be either:*

- a. deformed billet steel, ASTM A 615/A 615M, grade 420 (60); or*
- b. cold drawn steel wire, ASTM A 82.*

9. Epoxy Coated Reinforcing Bars. *Epoxy coated reinforcing bars will be jobsite sampled in accordance with the Frequency Manual. As an alternate procedure, the reinforcing bars may be furnished by selecting bars coated from an applicator's plant on the list of Certified Reinforcing Bar Epoxy Coaters and in accordance with ITM 301. The epoxy coating material shall be selected from the list of approved Epoxy Coating for Steel.*

Epoxy coated reinforcing bars shall be in accordance with ASTM A 775/A 775M, except as follows:

- a. the steel shall be in accordance with 910.01(b)1;*
- b. the coating color shall contrast with the color of iron oxide;*
- c. tensile and bend tests shall be performed on the bars. If an examination of the bend test specimen suggests the need, the adhesion of the coating shall be checked by subjecting additional specimens to the 120 bend test. Hairline cracks without bond loss will be acceptable provided there are not more than two and the length of either crack does not exceed 6 mm (1/4 in.). The coating thickness shall be 150 to 300 **mm** (6 to 12 mils) after cure. The thickness measurements shall be made in accordance with ASTM G 12. The average shall be based on 12 individual readings. No specific correction for the base preparation process shall be applied to the thickness measurements.*
- d. epoxy coated reinforcing bars which will be jobsite sampled shall be accompanied by the types of certifications in the Frequency Manual and in accordance with 916. Epoxy coated reinforcing bars furnished by coaters on the list of Certified Reinforcing Bar Epoxy Coaters shall be accompanied by the types of certifications specified in ITM 301 and in accordance with 916.*
- e. repair and handling procedures shall be in accordance with 703.04. The coating material shall be in accordance with the Annex to ASTM D 3963/D 3963M.*

Epoxy coated support devices for epoxy coated reinforcing bars shall be in accordance with ASTM A 775/A 775M, except as follows:

- a. the steel shall be in accordance with 910.01(b)1;*
- b. the coating color shall contrast with the color of iron oxide;*
- c. the coating thickness shall be 150 to 300 μm (6 to 12 mils) after cure. The thickness measurements shall be made in accordance with ASTM G 12.*

10. Dowel Bars. *Dowel bars shall be plain billet steel in accordance with ASTM A 615/A 615M Grade 300 (40), except the bend test and elongation requirements will not apply. The dowel bar area and mass (weight) for the nominal bar diameter shall be as follows:*

<i>Nominal Bar Diameter, mm (in.)</i>	<i>Cross Sectional Area, mm² (in.²)</i>	<i>Mass (Weight) kg/m (lb/ft)</i>
25 (1)	510 (0.79)	3.973 (2.670)
32 (1 1/4)	794 (1.23)	6.209 (4.172)
33 (1 5/16)	871 (1.35)	6.846 (4.600)
38 (1 1/2)	1142 (1.77)	8.941 (6.008)

Dowel bars shall be coated with an epoxy coating material selected from the list of approved Epoxy Coating for Steel. The coating thickness after cure shall be a minimum of 175 μm (7 mils). Dowel bars shall not have burring or other deformation restricting slippage in concrete. Dowel bar ends shall be saw cut. Chips from the cutting operation shall be removed from coated bars.

Dowel bars will be jobsite sampled in accordance with the Frequency Manual and, when shipped to the project site, the bars shall be accompanied by the types of certifications specified in the Frequency Manual and in accordance with 916. As an alternate procedure, the dowel bars may be furnished by selecting bars made by a coater and manufacturer on the list of Certified Reinforcing Bar Epoxy Coaters and in accordance with ITM 301. When shipped to Department contracts, the dowel bars shall be accompanied by the types of certifications specified in ITM 301 and in accordance with 916.

17-3.09 Monuments

17-3.09(01) General

Monuments are set to define certain civil boundaries (e.g., section lines) and to permanently establish vital survey points. Monuments are used by the Department are shown in the *INDOT Standard Drawings* and are defined as follows:

1. Monument Type “A”. Use this monument type with vitrified brick or asphalt surface on concrete base.
2. Monument Type “B”. Use this monument type with flexible pavements.
3. Monument Type “C”. This monument is used where a monument is required outside the pavement area.
4. Monument Type “D”. Use this monument type with concrete pavements.
5. Bench Mark Post. Used to establish Department bench marks.
6. Section Corner Monument. Used to monument section corners.

It is the responsibility of the designer to select the type of monument that best suits the location where a monument is required.

17-3.09(02) Civil Boundaries

The following will apply to monuments at civil boundaries:

1. Location. Provide monuments at all section corners and quarter section corners that fall within the right-of-way for a new facility or for a facility to be reconstructed except as noted in Item #2 below. Where a section line crosses a limited access facility, provide a monument at the intersection of the right-of-way line and the section line. For fenced, limited access right-of-way, place the monument outside the fence at each point where the section line crosses the limited access right-of-way line.
2. Responsibilities. The District will request the local county surveyor to establish all section corners and section lines not already defined by monuments at the time of construction. Should the county surveyor fail to establish such points as requested, the District will eliminate any monuments provided for this purpose from the construction contract.
3. Plans. Designate all monuments by type and show them on the plans with an arrow to their approximate location.

17-3.09(03) Survey Points

Original survey points will be monumented so that the original survey line for a highway facility may be re-established accurately at any time after construction. Resurface projects are exempt from these requirements. Other projects not requiring new right-of-way may also be exempt. Survey line points and their respective monuments are used as the basis for the description of all right-of-way that is acquired for a project. With respect to right-of-way description, they are as significant as section corners. Survey line monuments must be set by a registered land surveyor. The following will apply to providing survey monuments:

1. Monumenting PI's, PC's and PT's
 - a. Where the PI falls within the R/W, provide a monument at the PI.
 - b. Provide a monument at all PC's and PT's.
 - c. Designate all monuments by type and show them on the plans with an arrow to their approximate location.
2. Monumenting Beginning and End of Project

A monument shall be placed on the survey centerline at the beginning and the end of every project.
3. Monumenting POT's and POC's. The following will apply:
 - a. It is not necessary to monument all POT's and POC's. These intermediate points will be monumented as necessary so that the maximum interval between adjacent monuments does not exceed 300 m.
 - b. The designer must inspect the plans and select intermediate points to be monumented so that an instrument man can see a tripod with a target set on an adjacent monument in at least one direction. For this purpose, use a line-of-sight 1.2 m above adjacent monuments.
 - c. Locate monuments so that the line-of-sight between adjacent monuments will fall within the right-of-way.
 - d. Where practical, the monuments required to define POC's and POT's should coincide with a POC or a POT established during the original survey for greater accuracy in locating the monument.
 - e. Designate POC or a POT monument by type and station and show them on the plans with an arrow to their approximate location.

17-3.09(04) INDOT Bench Marks

All highway projects, both new construction and reconstruction projects, should provide a bench mark at least every 2.5 km. These bench marks should be located as follows:

1. Structures. Include a bench mark on all bridges, slab top culverts and box culverts. Where twin structures or dual structures are constructed at the same location, a bench mark is only required on one structure.
2. Non-Structures. Where the spacing of structures is in excess of 2.5 km, show bench mark posts on the plans and space them so that the maximum spacing between bench marks is 2.5 km.
3. Plans. Designate bench mark posts required under Item #2 by station on the plans with the following note:
 "Bench Mark Post Required
 Station _____ + _____"

17-3.09(05) Correcting Plans

The District Construction Engineer shall notify the Survey Unit Supervisor in the Division of Design whenever monuments are eliminated from the contract or the location of a monument is changed. The as-built plans shall reflect any changes that were made to the monument locations shown on the construction plans.

17-3.09(06) R/W Markers

For information on right-of-way markers, see Section 85-7.0 in Part IX of the *Indiana Design Manual*.

17-3.09(07) National Geodetic Survey Bench Marks

All National Geodetic Survey bench marks disturbed by highway construction must be re-established. It is the responsibility of the Contractor to secure the replacement disk for these bench marks. In addition, the construction plans should include the following note:

“NGS Bench Mark Post No. _____, _____ Rt.
(or Lt.) of Station _____ to be re-established by the Contractor.”

Information for field procedures on resetting NGS bench marks may be obtained by contacting the Geodetic Advisor for the state of Illinois at (217)524-4890 or the Geodetic Advisor for Indiana located at Purdue University at (765)494-2165.

United States Geological Survey Bench Marks

All United States Geological Survey (USGS) bench marks disturbed by highway construction must also be re-established. Information on resetting USGS bench marks may be obtained by contacting the Mid-Continent Regional Office of the USGS in Rolla, MO at (573)308-3630.

17-3.09(08) National Geodetic Survey Horizontal Control Points (formerly Triangulation Points)

The section manager or designer is responsible for notifying the Director of the NGS, Washington, D.C., whenever NGS horizontal control points must be re-established because of proposed highway construction. This notification will be by letter from the Chief, Division of Design, and should be made at the time the plans are sent to the District.

It is not necessary to include monuments in the construction plans for use in re-establishing NGS horizontal control points, however the appropriate monuments should be requested from the NGS to replace the existing horizontal control point monuments being re-established.

a:\monuments.jej.[6]

Bridge Rail, excerpt from draft Chapter 61 of the Design Manual

Figure 61-6F shows the various types of bridge rails. A detail of the side-mounted thrie beam (PL-1) is shown on attachment A. The warrants for PL-3 bridge rail are contained in Chapter 49 of the Design Manual. Figures 61-6A (divided non-freeway) and 61-6B (undivided non-freeway) show the warrants for PL-1 and PL-2 bridge rails. The K factors (K_g , K_c , and K_s) contained in 49-9.01(01) must be applied to average daily truck volume in the design year before using the chart.

PL-2 or PL-3 bridge rail is to be used for all bridges carrying an INDOT road over streams, roads, and/or railroads. Exceptions to this policy must be approved in writing by a Design Development Section Manager.

The Standards Section is being asked to prepare standard drawings of all PL-1 railings. In the interim, you may obtain sample details for all acceptable PL-1 railings from Ms. Janie Marks, Records Unit Supervisor, Room N642 of the Indiana Government Center North (317-232-5344).

PROCEDURAL MANUAL FOR PREPARING A
DESIGN SUMMARY

A DIVISION OF DESIGN DOCUMENT
REV. MARCH 1998

important design elements or features that were not addressed in the environmental document should be included in the Design Summary.

The first sentence of the Design Summary should include the work category. Examples of work category include: Added Travel Lanes, Bridge Replacement, Road Reconstruction, etc.

- a. Roadway - the following minimal data should be included:
 1. total project length
 2. changes in horizontal and vertical alignment
 3. length of approach work from each end of a bridge (for bridge projects only)
 4. note whether the intersection sight distance meets the applicable criteria for the project
- b. Structure (if applicable) - the following minimal data should be included:
 1. description of the structure - structure type, span lengths, skew
 2. clear roadway width of structure
- c. Miscellaneous Project Related Information - when applicable, the following project features should be briefly addressed:
 1. significant county road relocations
 2. less than standard intersection sight distance
 3. underground storage tank remediation
 4. channel relocation
 5. clearing of wooded/forest areas
 6. significant historical/archaeological considerations
 7. sidewalks
 8. design exceptions
 9. level two design criteria not met
 10. permanent road closures
- d. Discussion of Alternates - It is not necessary to repeat the discussion of alternatives contained in the Preliminary Engineering Study and the environmental document. In most cases the Public Hearings Section can refer to the environmental documents which they have on file.

3. Need for Improvement

- a). The need for improvement should include a brief description of the existing facility and the current condition of the facility. For bridges, discuss the existing structure condition, substandard geometrics, or the inadequacy of the existing waterway opening.
- b). The accident history of the project location should be briefly discussed in this section, if it is a contributing factor to the need for the project.
- c). For major projects the following additional points may be applicable:
 - Transportation demand - including the urban transportation plan.
 - Federal, state or local government authority (legislation) directing the action.

BRIDGE REPLACEMENT SPECIAL PROVISION CHECKLIST

12-30-97

Every bridge replacement project will have the following:

- | | | | |
|-------------|---|-----------|-----------|
| 100-C-150 | 102-C-064 | 106-C-074 | 106-R-276 |
| • 100-C-146 | Min. Wage (Lake, LaPorte, Porter and St. Joseph County) <u>OR</u> | | |
| • 100-C-147 | Min. Wage (Elsewhere) | | |
| • 104-C-139 | Geotechnical Evaluation Report | | |
| • 105-R-305 | Pipe Structure Pay Items | | |
| • 107-B-122 | Environmental Permit Conditions | | |
| • 107-C-051 | U.S. Army Corps of Engineers Permit | | |
| • 107-R-169 | Existing Conditions of Additional R/W, Utilities, etc. | | |
| • 206-B-113 | General Bridge Requirements (If Design Approval after 3-1-94) | | |
| • 211-R-357 | B-Borrow and B-Borrow for Structure Backfill | | |
| • 400-R-343 | Asphalt Pavement | | |
| • 601-R-183 | Guardrail End Treatments | | |
| • 608-R-348 | Coarse Aggregate | | |
| • 621-R-283 | Seeding Outside Construction Limits | | |
| • 703-B-053 | Threaded Tie Bar Splices (R. C. Bridge Approach) | | |
| • 703-C-138 | Reinforcing Steel | | |
| • 715-R-349 | Pipes | | |

Many bridge replacement projects will also require the following:

- | | |
|--------------|--|
| • 107-B-040 | Environmental Restrictions |
| • 108-R-263 | Wetlands Replacement Site |
| • 201-C-052 | Clearing R/W (Pay item: Clearing R/W) |
| • 203-R-345 | Basis of payment for combined quantities of Borrow, Common
Excavation and Unclassified Excavation (If combined total is less than
12000 m3.) |
| • 622-R-347 | Planting Trees, Shrubs and Vines. (Pay Item: Seedlings) |
| • 701-B-101d | Pile Driving and Equipment Data Form |
| • 701-B-132 | Pile Driving |
| • 707-B-013 | High Range Water Reducers in Prestressed Beams |
| • 715-R-341 | Pipe Material Selection (Pipes Referred to as Groups) |
| • 715-R-342 | Pipe Backfill Methods (Pipes Referred to as Groups) |
| • 718-R-326 | Underdrains (When old pipe groups are used) |
| • 718-R-326A | Underdrains (When new pipe stds. are used) |
| • 808-B-114 | “No Passing” Zone Repainting |
| • 904-R-346 | Foundry Sand (Pay Item: Conc. Pipe, Underdrain, Manhole, Inlet, etc.) |
| • 910-B-097 | Reinforcing Steel, Type and Grade (Gr. 60 Steel) |

Other occasionally recurring bridge related special provisions:

- | | |
|--------------|---|
| • 103-C-036 | Owners and Contractors Liability Insurance (LPA Contracts only) |
| • 107-R-042a | Railroad Information |
| • 107-R-042b | Protection of Railway Interest |
| • 203-B-025 | Marion County Borrow Pits |

- 203-R-155 Rock Backfill
- 203-R-205 Wetland Identification (If project has Waste Excavation)
- 203-R-286 Excess Excavated Materials Disposal Site (If Waste)
- 206-B-021 Cofferdams.
- 206-B-120 Proof Testing of Rock
- 601-R-146 Removal of Guardrail (If Guardrail Requested by District)
- 622-R-209 Wildlife Habitat (Do Not Use if Shown on Plans)
- 701-B-068 Bitumen Coating for Piles
- 701-B-078 Oversized Predrilled Pile Holes for Integral End Bent Structures
- 703-B-022 Ordering Reinforcing Steel (Spread Footing on Soil or Rock)
- 706-B-112 Curb Mounted Bridge Railing
- 711-B-118 A 709 Steel Grade 50W
- 713-B-076 Temporary Pipe (Pay Item: Temp. Pipe and Approaches)
- 714-R-282 Precast Reinforced Concrete 3-Sided Culvert
- 715-R-297 Safety Metal Culvert End Section
- 720-R-173 Proof Load for Castings (Pay Item: Inlet, Catch Basin or Manhole)
- 724-B-086 Approved Expansion Joint SS Devices
- 726-B-044 Bearing Assemblies
- 728-B-039 Masonry Coating (Urban Projects)
- 730-R-350 Grated Box End Sections
- 806-B-115 Temporary Traffic Signal with Loop Detector (One Lane Traffic)
- 808-M-016 Removal of Snowplowable Markers

Road Special Provisions Occasionally Recurring in Bridge Projects:

- 203-R-121 Borrow Pit Wetland Enhancement (If Requested by F&W)
- 215-R-189 Lightweight Engineered Fill
- 617-R-188b Geogrid
- 714-R-003 Bin Type Retaining Wall
- 717-R-152 Alternates to Structural Plate Pipes
- 731-R-202 Mechanically Stabilized Earth Retaining Walls
- 801-R-288 Solar Power Assisted Flashing Arrow Sign

For Projects that require “Removal of Buildings” Include:

- 106-L-003
- 108-L-001
- 108-L-012 Speciality Pay Items (Pay Item: Asbestos Testing and Removal)
- 202-L-004
- 202-L-008

Note: This is only a suggested list of Recurring Special provisions. It is the Project Manager’s responsibility to compile an accurate list.

c:\br.replc.checklist.jc

Erosion & Sediment Control Plan Checklist

Erosion & Sediment Control Plan Checklist, as distributed in this bulletin, is available from Jeff Clanton, Consultant Services Manager, at jeff_clanton@indot.ibmmail.com.

Application Form and Instructions for Section 401 Water Quality Certification

Application Form and Instructions for Section 401 Water Quality Certification, as distributed in this bulletin, are available from Jeff Clanton, Consultant Services Manager, at jeff_clanton@indot.ibmmail.com.